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WATER SUPPLY OUTLOOK
FOR
MONTANA

and

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE - SOIL CONSERVATION SERVICE.

and

MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State, and private organizations listed on the inside back cover of this report.

AS OF
MAR. 1, 1967

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season as they affect runoff will add to be an effective average. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Listed below are water supply outlook reports based on Federal-State-Private Cooperative snow surveys. Those published by the Soil Conservation Service may be obtained from Soil Conservation Service, Room 507, Federal Building, 701 N. W. Glisan, Portland, Oregon 97209.

PUBLISHED BY SOIL CONSERVATION SERVICE

D. A. WILLIAMS, Administrator

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 507, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85205
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	P. O. Box 38, Boise, Idaho 83701
Montana	P. O. Box 855, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4001 Federal Building, Salt Lake City, Utah 84111
Washington	840 Bon Marche Bldg., Spokane, Washington 99206
Wyoming	P. O. Box 340, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS
For
MONTANA

Report Prepared
By
Phillip E. Farnes
Snow Survey Supervisor
And
Stanley E. Cook
Assistant Snow Survey Supervisor

Snow Survey and Water Supply Forecasting Unit
Soil Conservation Service
Box 98
Bozeman, Montana

A. B. Linford
State Conservationist
Soil Conservation Service
Bozeman, Montana

J. A. Asleson, Director
Montana Agricultural
Experiment Station
Bozeman, Montana

Issued By

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MONTANA WATER SUPPLY OUTLOOK March 1, 1967

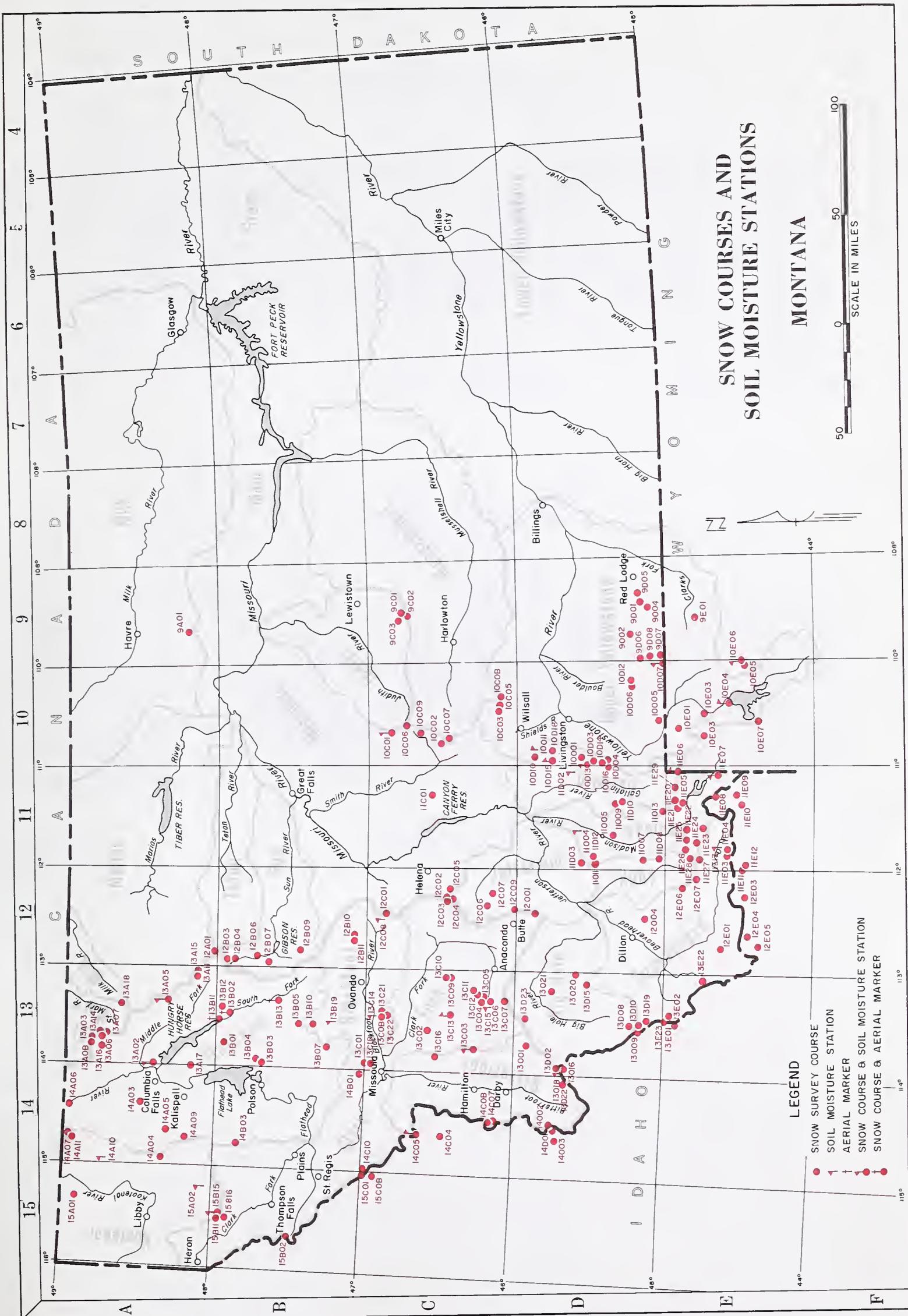
West of the Divide, high elevation snow pack in the Mission and Whitefish ranges in Montana, and into the headwaters of the Kootenai, have a record snow pack. Near record snow accumulation was recorded in high elevations of the Flathead drainage. The median elevations in the Kootenai and Flathead have above average snow pack, while low elevations are near to below average. The Bitterroot and Clark Fork drainages have near average snow pack. In these drainages the high elevation accumulation is above average, while low elevations are near or a little below average. The snow pack is extremely dense for this time of the season.

East of the Divide, snow pack is heavy in the higher elevations, decreases to above average in the median elevations, and is generally near average in the lower elevations. The snow pack in the high elevations of the Sun and Teton River drainages is third highest to maximum of record, fourth highest of record in the Gallatin drainages, and portions of the Absaroka-Beartooth ranges, and near or above the highs recorded in 1965 along the top of the Little Belt, Big Belt and Castle mountains. Snow pack in all other drainages is presently above average.

In the Columbia River drainage, seasonal streamflow volume is forecast to be second highest on record on the main stem of the Kootenai River as it enters Montana from British Columbia. Runoff from streams tributary to the Kootenai in Montana are forecast above average but not near the record flow. This less than record inflow will reduce flow on down the main stem. Runoff at Leonia is forecast as the fifth highest on record. April through September streamflow on the Flathead drainages is forecast third to fifth highest on record. The Swan River is forecast second highest on record. The Blackfoot River is forecast above average, while the Upper Clark Fork and Bitterroot drainages should produce near to a little above average seasonal runoff. The Clark Fork below the Flathead is forecast 10 to 15 percent above average.

Streamflow east of the Divide is forecast 20 to 30 percent above average for the Red Rock, Gallatin, Sun River and St. Mary drainages, and for streams whose headwaters originate in the Little Belt Mountains and in the Absaroka and Beartooth mountains. The Big Hole and Ruby drainages are forecast a little above average, while the remainder of the drainages east of the divide are forecast from 10 to 20 percent above average.

Late season irrigation supplies are expected to be above average.

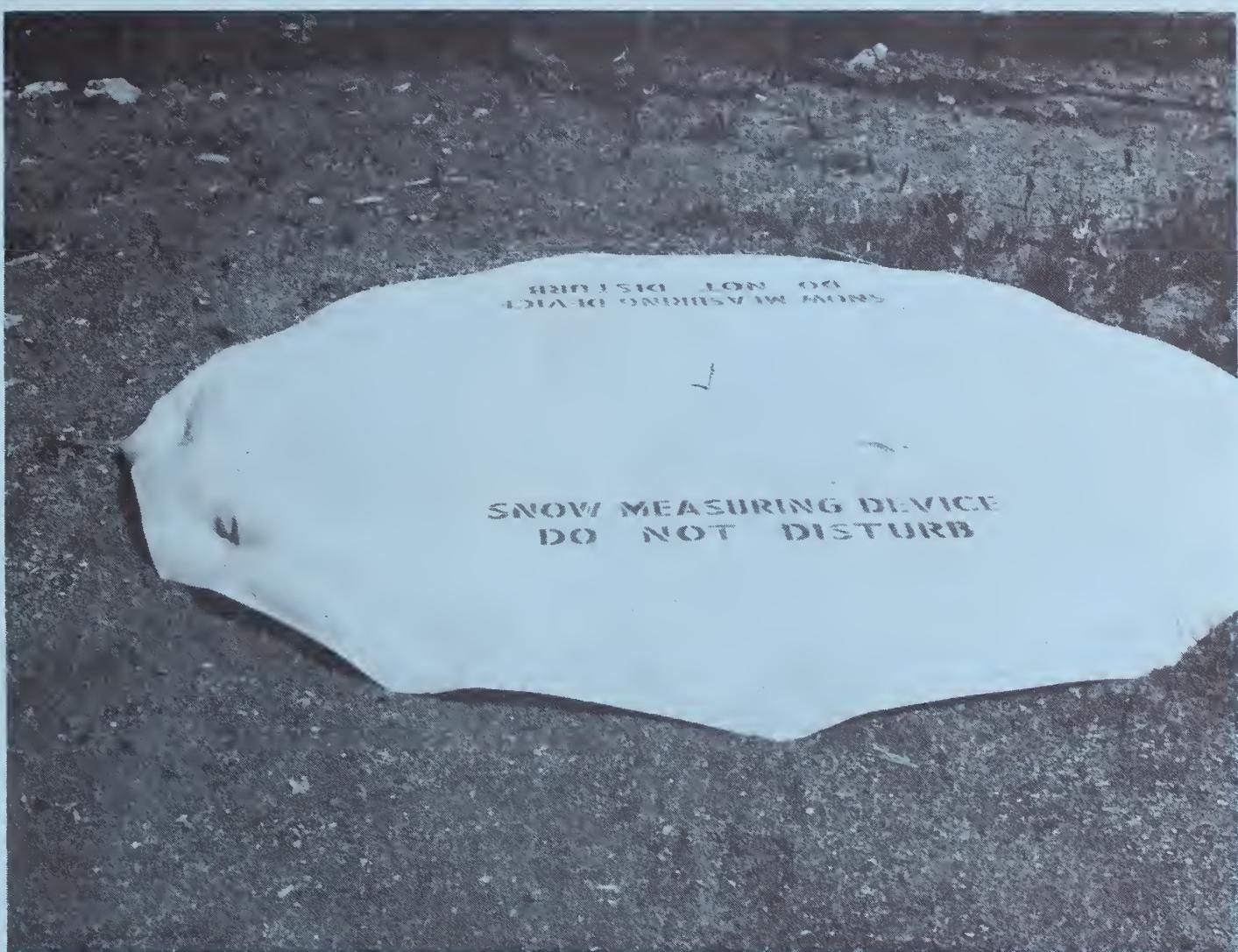


INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

SNOW COURSES

Drainage Basin & Course Name	Number	Elev.	Sec.	Dep.	Range	Record Began	Measuring Dates b	Meas. By 2/	SOIL MOISTURE STATIONS								
									Drainage Basin & Course Name	Number	Elev.	Sec.	Top.	Range			
RUBY RIVER																	
KOOTENAI RIVER	15B11	5500	36	26N	31W	1956	3,4,5,5 ₁	2	Clover Meadow	11D08	8600	28	9S	2W	1963	3,4,5	1
Bear Creek	15B16	6600	31	26N	35W	1965	3,4,5,5 ₁	2	Divide Notch	12E07	7900	14	12S	4W	1963	3,4,5	1
Bear Creek	15B15	3800	5	25N	30W	1957	3,4,5,5 ₁	2	BIG HOLE RIVER	13D20	8800	7	11W	1963	3,4,5	1	
Brush Creek	1A01	5000	12	20N	26W	1957	3,4,5,5 ₁	1,2	Abundance Lake	13D19	8600	4	8S	13W	1963	3,4,5	1
Graves Creek	1A11	4300	1	36N	25W	1957	3,4,5,5 ₁	6	Darkhorse Lake	13D21	8280	11	1S	15W	1963	3,4,5	1
Red Mountain	15A01	6000	4	36N	29W	1957	3,4,5,5 ₁	6	Foothills	13D08	7340	25	15W	1963	3,4,5	1	
Westall Divide	1A07	5450	20	37N	24W	1957	3,4,5,5 ₁	6	Jamie Creek	13D23	8450	3	2N	15W	1967	3,4,5	1
JEFFERSON RIVER																	
Barsoo Peak	1A03	5150	11	24N	25W	1951	3,4,5	1,5	Barry Meadow	12C07	7300	8	5N	5W	1962	3,4,5	1
Barsoo Lake	13A11	5900	31	28N	11W	1964	3,4,5	2	Copper Mountain	12C09	7700	13	3N	7W	1966	3,4,5	1
Big Creek	1B03	6750	7	22N	18W	1962	3,4,5	6	Plane Clouds	12C06	6500	21	5N	6W	1961	2,3,4	4
Cap Rock	1A04	6400	20	38N	18W	1962	3,4,5	6	Piperstone Pass	12D01	7200	10	1N	7W	1938	1,2,3,4,5	1
Desert Mountain	13B02	4600	21	31N	19W	1937	1,2,3,4,5	6	MADISON RIVER	11D07	8050	21	8S	2W	1962	3,4,5	1
Fatty Creek	1B02	3500	8	22N	18W	1962	3,4,5	6	Call Road	11D12	6900	5	4S	2W	1965	3,4,5	1
Graffin Creek Divide	1A03	5150	11	28N	25W	1960	3,4,5	1,5	Four Mile	11E25	7200	6	12S	1W	1965	3,4,5	2
Gunsight Lake	13B12	6300	35	32N	22W	1962	1,2,3,4,5	6	Freezeout Lake	11E26	8250	26	11S	1W	1965	3,4,5	2
Hell Roaring Divide	1A03	5770	18	21N	13W	1951	1,2,3,4,5	6	Freeroot Mountain	11E05	6550	22	11S	1W	1934	1,2,3,4,5	3
Holbrook	1B03	4530	18	37N	22W	1954	3,4	6	Hebgen Dam	11D05	7500	13	6S	1W	1961	3,4,5	1
Kishbrook	1A04	3890	14	30N	19W	1937	1,2,3,4,5	6	Jack Creek	11E22	6100	27	11S	1W	1967	3,4,5	2
Loren Creek	1A05	4200	34	30N	14W	1934	1,2,3,4,5	6	Lion Mountain	11E28	8750	23	11S	2W	1967	3,4,5	2
Varian Pass	13A05	42250	34	30N	14W	1934	1,2,3,4,5	6	Loren Twin	11E23	7000	12	4S	2W	1965	3,4,5	2
Mineral Creek	13A16	3000	29	31N	17W	1971	3,4,5	6	Marietta Creek	11E23	7000	11	12S	1E	1965	3,4,5	2
North Fork, Lolo	13B07	6330	3	17N	17W	1961	3,4,5	6	North Meadow	11E03	7500	24	3S	1E	1961	3,4,5	1
Spotted Bear Mountain	13B02	6000	23	15N	15W	1968	1,2,3,4,5	6	Pocatello Park	11E20	8300	17	10S	1E	1965	3,4,5	2
Twin Creeks Lake	13B11	5580	9	22N	17W	1964	3,4,5	6	Sentinel Creek	11E24	8000	15	12S	1W	1965	3,4,5	2
Upper Holland Lake	13B05	7000	24	20N	15W	1948	1,2,3,4,5	6	Teepée Creek	11E27	8750	6	12S	1W	1966	3,4,5	2
CLARK FORK RIVER																	
Black Pine	13C13	7100	26	8N	15W	1959	Continuously	1	GALATIN RIVER	11D04	7350	3	5S	6S	1963	1,2,3,4,5,5 ₁	1
Copper Creek	12B10	5700	1	15N	9W	1962	3,4,5	1,2	Arch Falls	11D14	7350	3	5S	6S	1963	3,4,5	1
Cottar Mine	12B11	6250	2	15N	9W	1962	1,2,3,4,5	6	Bear Basin	11D09	8150	9	6S	6S	1963	3,4,5	1
Corolla Hill	13B10	4200	12	18N	16W	1947	3,4,5	1,2	Brider Bowl	11D15	7250	25	11N	6S	1965	Continuously	1
El Dorado Mine	13C09	7800	23	12N	13W	1937	3,4,5	1	Carroll Basin	11D20	9000	18	10S	6S	1967	Continuously	2
Fred Burr Pass	13C11	8000	12	12N	6W	1937	3,4,5	1	Devil's Slide	11D24	8100	14	5S	6S	1935	1,2,3,4,5,5 ₁	1
Gold Creek Lake	13C10	7200	14	12N	12W	1949	3,4	6	Hood Meadow	11D03	6600	22	4S	6S	1935	2,3,4,5,5 ₁	1
Heart Lake Trail	14C10	4800	11	12N	27W	1965	3,4,5	1,2	Lick Creek	11D13	6860	10	4S	6S	1964	Continuously	1
Hoodoo Basin	15C08	6000	17	14N	27W	1967	1,2,3,4,5	6	Little Park	11D10	7200	22	6S	7S	1963	Continuously	1
Hoodoo Creek	15C20	6160	16	14N	27W	1957	1,2,3,4,5	6	Maynard Creek	11D18	6210	19	11S	7S	1967	Continuously	1
Intersabur Forest - No. 3	13C21	6240	19	13N	14W	1951	1,2,3,4,5	8	New World	11D01	6700	24	3S	7S	1939	2,3,4	1
Lubrecht Forest - No. 4	13C22	6250	23	13N	15W	1951	1,2,3,4,5	8	Shower Falls	11D06	8100	14	5S	7S	1966	Continuously	1
Lubrecht Forest - No. 6	13C08	6500	11	12N	13W	1958	1,2,3,4,5	8	Taylor Peaks	11D13	8500	26	9S	7S	1967	Continuously	1
Red Lion	13C12	7100	30	12N	17W	1956	1,2,3,4,5	6	Twenty One Mile	11E06	7150	1	11S	7S	1934	1,2,3,4,5	3
Skalkaho Summit	13C03	7260	35	10N	16W	1937	3,4,5	6	MISSOURI RIVER MAIN STEM	11C01	7950	1	9W	3E	1963	3,4,5	1
Slide Rock Mountain	13C02	7600	8	12N	13W	1936	2,3,4	6	Boulder Mountain	12C01	6200	2	8N	5W	1936	1,2,3,4,5	3
Southern Cross	13C18	6000	12	12N	14W	1961	1,2,3,4,5	8	Chesman Reservoir	12C05	6450	23	12N	8E	1966	3,4,5	2
Spring Gulch	13C01	5200	16	27N	19W	1937	1,2,3,4,5	6	Deadman Creek	11C05	10059	10	8N	8E	1963	3,4,5	2
Storm Lake	13C07	7780	19	12N	5W	1951	1,2,3,4,5	6	Elk Peak	10C07	8000	10	9N	8W	1938	3,4,5	2
Stuart Mill	13C06	6500	19	12N	5W	1936	1,2,3,4,5	6	Grasshopper King's Hill	10C01	7500	24	13N	8E	1934	3,4,5	2
Stuart Mountain	13C01	7200	6	12N	18W	1956	1,2,3,4,5	6	King's Hill	9A01	5200	15	12N	7W	1941	3,4,5	2
TV Mountain	14B01	6800	33	12N	19W	1956	1,2,3,4,5	6	Rocky Boy	12C01	6600	16	13N	7W	1934	3,4,5	2
MISSOURI RIVER MAIN STEM																	
Amrose	13C16	6480	28	9N	18W	1950	3,4,5	1	Stemple Pass	12A05	6900	4	27N	1W	1964	3,4,5	2
East Fork R.S.	13D01	5000	16	2N	17W	1937	3,4,5	1	Tan Mill	12C02	5200	33	23N	12W	1949	3,4,5	2
Gibbons Pass	13B02	7100	4	13N	19W	1962	3,4,5	1,3	Tan Mill Middle	12C03	6800	12	26N	10W	1948	3,4,5	1
Lost Horse	14C07	5940	55	5N	23W	1960	3,4,5	1,3	Tan Mill Upper	12C04	8000	19	8N	5W	1935	3,4,5	3
Nez Perce Pass	14D02	5500	5	4N	23W	1957	3,4,5	1	SUN-TRITON-MARIAS RIVERS	12A01	5700	25	22N	10A	1934	1,2,3,4,5	3
Saddle Mountain	13D22	6940	5	2S	19W	1965	3,4,5	1	Badger Creek	12B06	5200	33	23N	10A	1948	3,4,5	2
Twin Lakes	14C08	6510	32	5N	23W	1960	3,4,5	1	Five-Bull	12B09	5700	25	20N	10A	1948	3,4,5	1
ST. MARY RIVER BASIN																	
Hudson Bay Divide	13A18	5800	24	3A1	14W	1953	3,4,5	3,9	Freight Creek</td								

THE SNOW PILLOW



Snow Pillow installation at Lick Creek, Montana

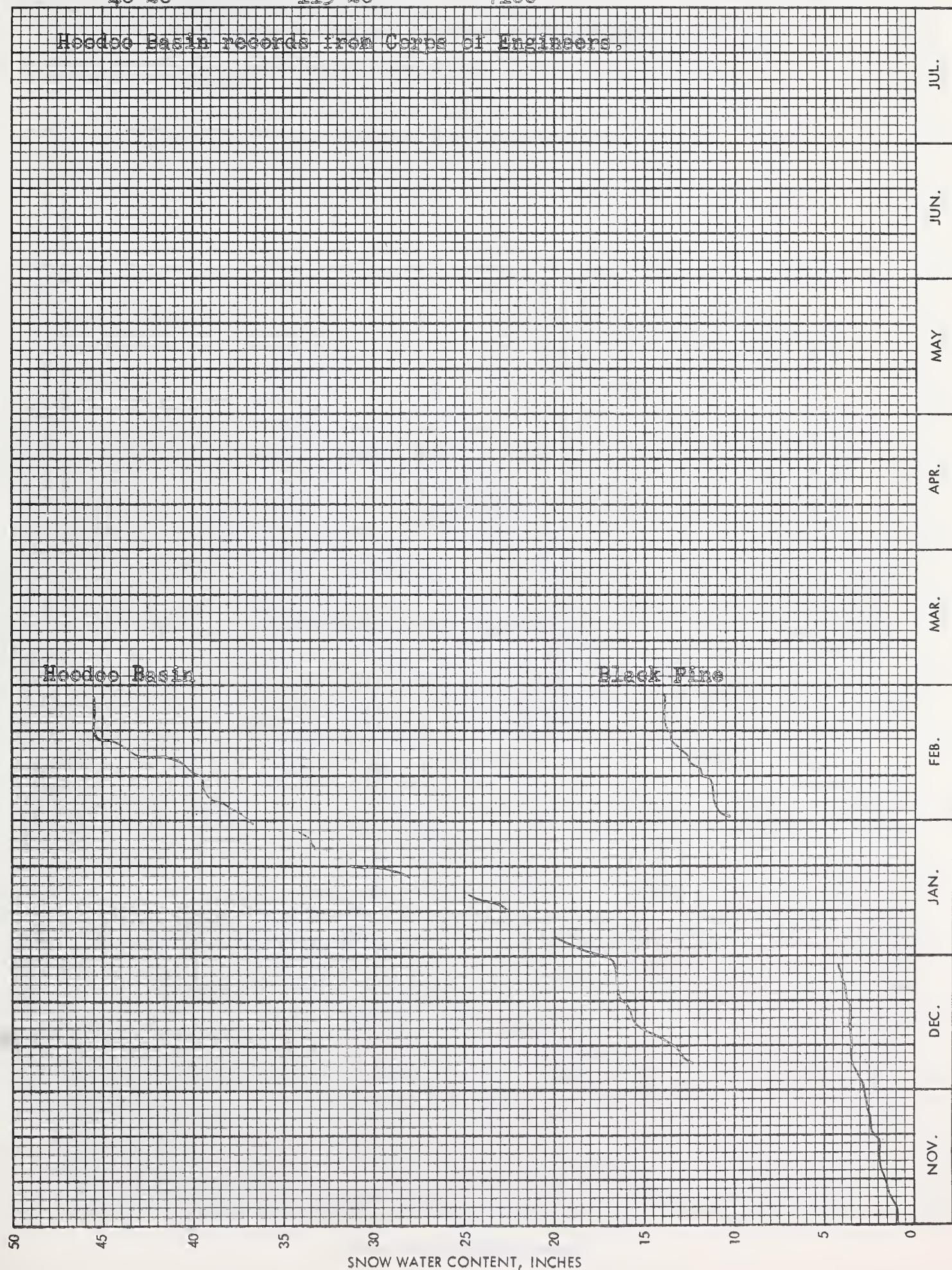
During the past few years the Soil Conservation Service has tested snow measuring devices for obtaining a continuous record of snow accumulation and melt. The most versatile and promising is the nylon reinforced butyl or neoprene snow pillow, which is usually about 12 feet in diameter and filled with a methanol alcohol-water solution to a depth of three inches. The pillow is placed on a level ground surface. A hose connects the pillow to a manometer or pressure transducer in an instrument shelter. As snow falls on the pillow the amount of fluid rise in the manometer is equivalent to the water content in the snow pack. A water level recorder installed in the manometer provides a continuous record of the snow water content. Telemetered (transmitted by radio signal) information is obtained by connecting a pressure transducer to the pillow. The signal from the transducer is converted to equivalent inches of water content at the receiving station. Air temperature, total precipitation, soil moisture and soil temperature can be telemetered, in addition to snow water content.



HOODOO BASIN & BLACK PINE
SNOW PILLOW DATA

AS OF MARCH 1, 1967

Hoodoo Basin - Sec. 17 T. 14N R. 27W No. 15C08 Drainage: Clark Fork
 Black Pine - 26 8N 15W 13C13
 Hoodoo Basin - Lot. 46-59 Long. 115-02 Elev. 6000
 Black Pine - 46-26 113-26 7100



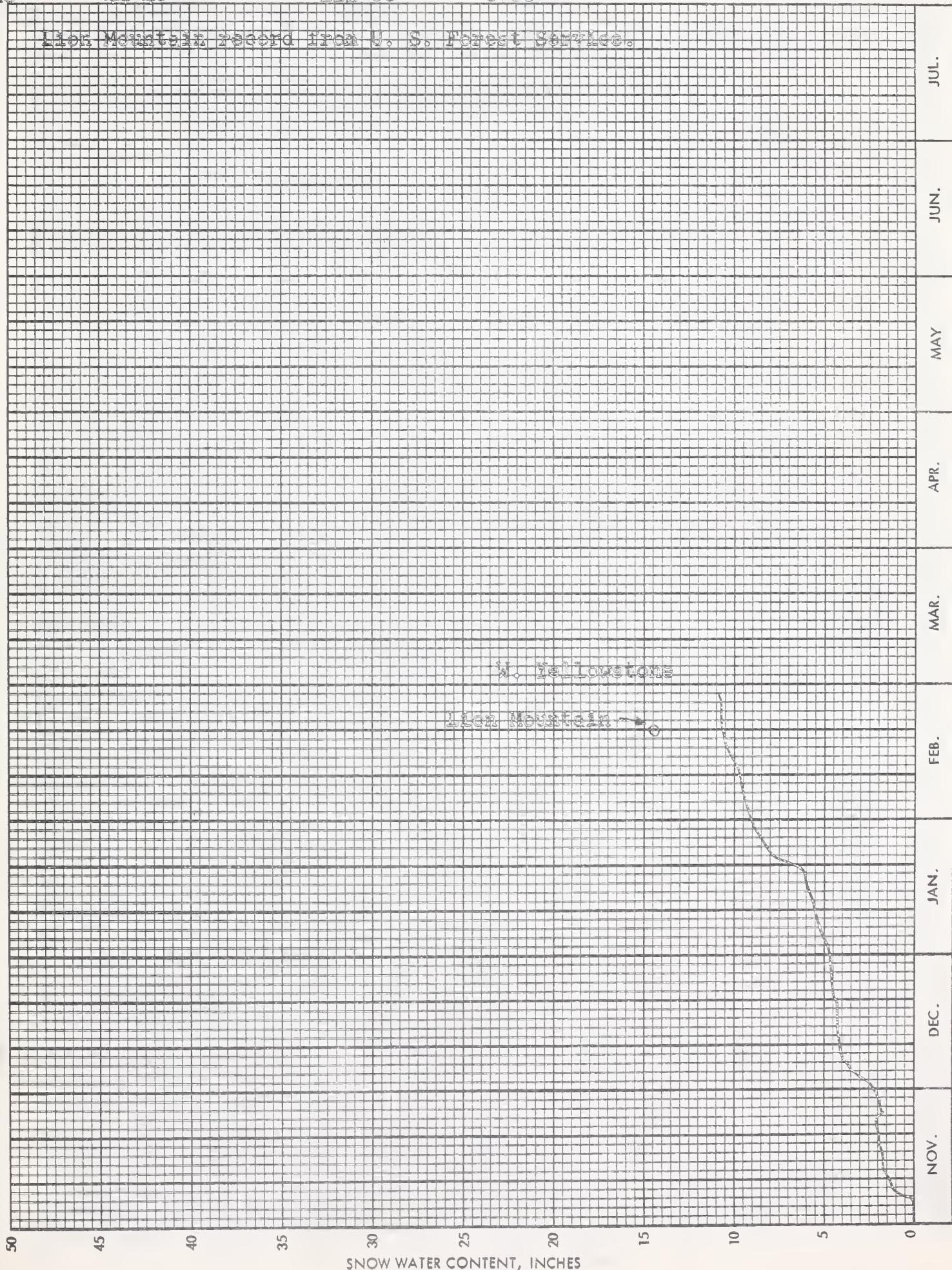


LION MOUNTAIN & W. YELLOWSTONE
SNOW PILLOW DATA

AS OF MARCH 1, 1967

Lion Mountain	Sec. <u>23</u>	T. <u>11S</u>	R. <u>2W</u>	No. <u>11E28</u>	Drainage: <u>Madison</u>
W. Yellowstone	-	34	13S	SE	11E07
Lion Mountain	-	Lat. <u>44-52</u>	Long. <u>111-48</u>	Elev. <u>8760</u>	
W. Yellowstone	-	<u>44-40</u>	<u>111-06</u>	<u>6700</u>	

Lion Mountain record from U. S. Forest Service.

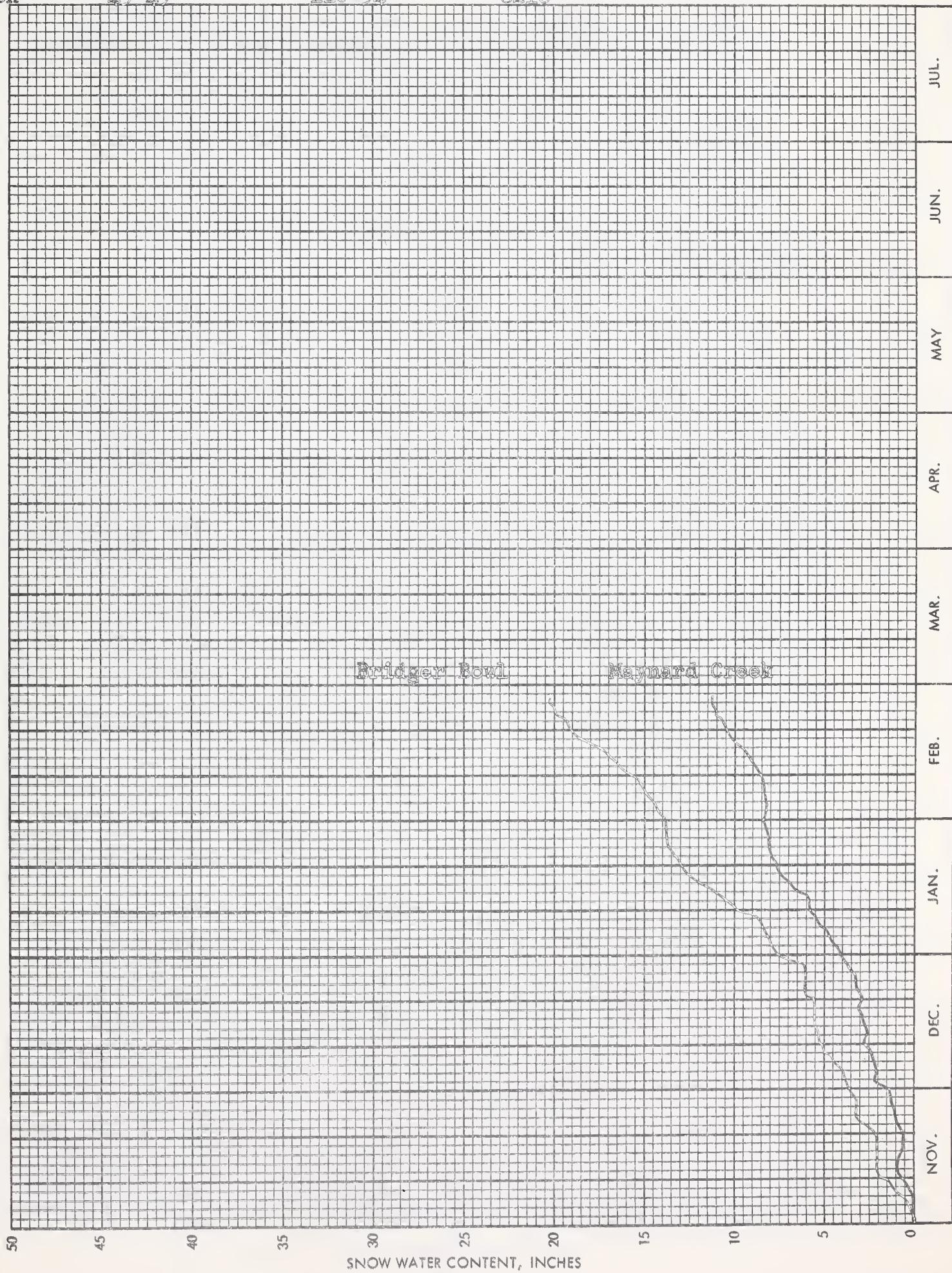




BRIDGER BOWL & MAYNARD CREEK
SNOW PILLOW DATA

AS OF MARCH 1, 1967

Bridger Bowl	Sec. <u>25</u>	T. <u>1N</u>	R. <u>6E</u>	No. <u>10D15</u>	Drainage: <u>Gallatin</u>
Maynard Creek	Sec. <u>19</u>	T. <u>1N</u>	R. <u>7E</u>	No. <u>10D18</u>	
Bridger Bowl	Lat. <u>45-48</u>	Long. <u>110-55</u>	Elev. <u>7250</u>		
Maynard Creek	Lat. <u>45-49</u>	Long. <u>110-54</u>	Elev. <u>6210</u>		



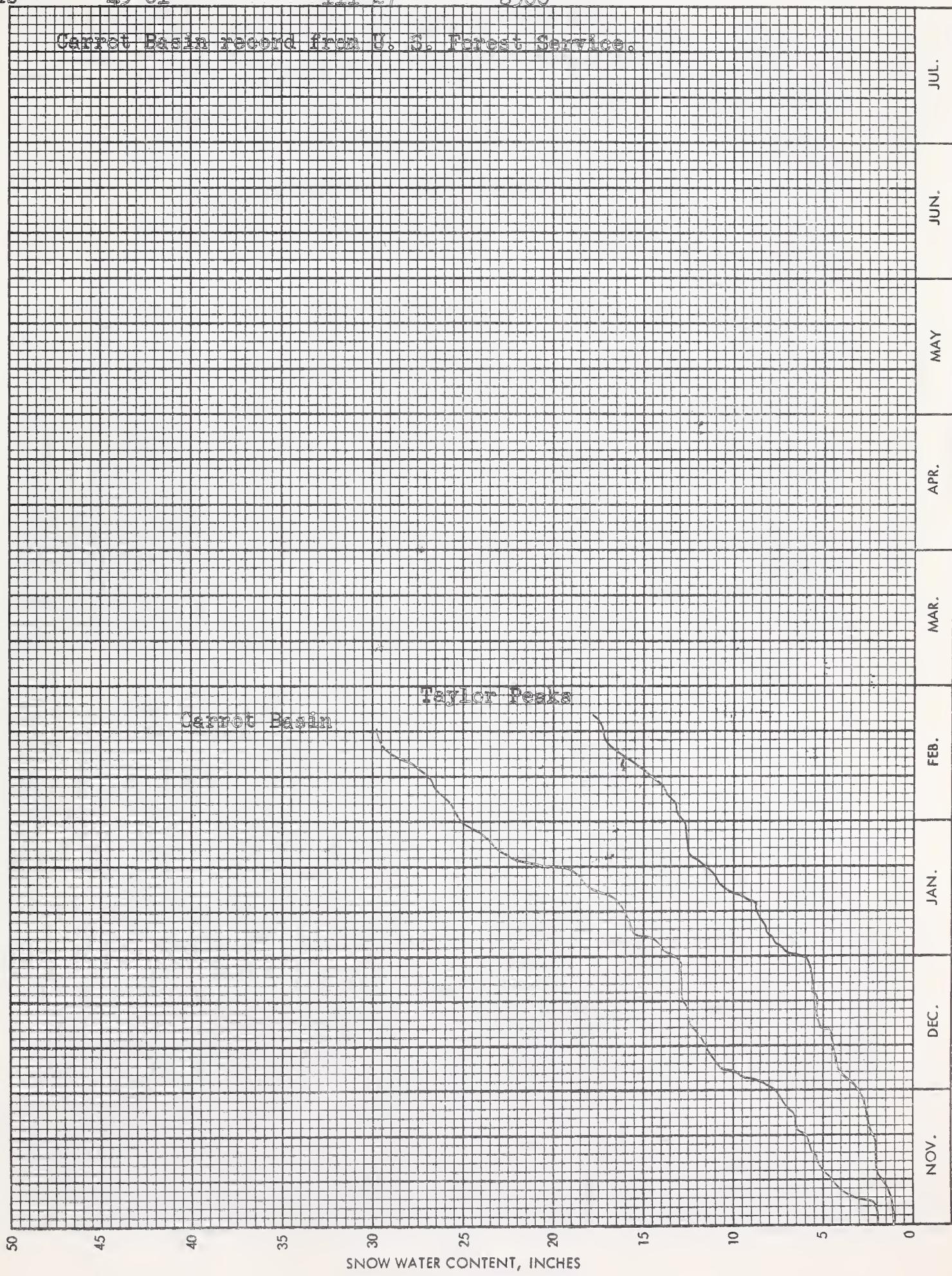


CARROT BASIN & TAYLOR PEAKS
SNOW PILLOW DATA

AS OF MARCH 1, 1967

Carrot Basin - Sec. 18 T. 10S R. 4E No. 11E29 Drainage: Gallatin
Taylor Peaks - 26 9S 2E 11D13
Carrot Basin - Lot. 44-58 Long. 111-58 Elev. 9000
Taylor Peaks 45-01 111-27 8500

Carrot Basin record from U. S. Forest Service.

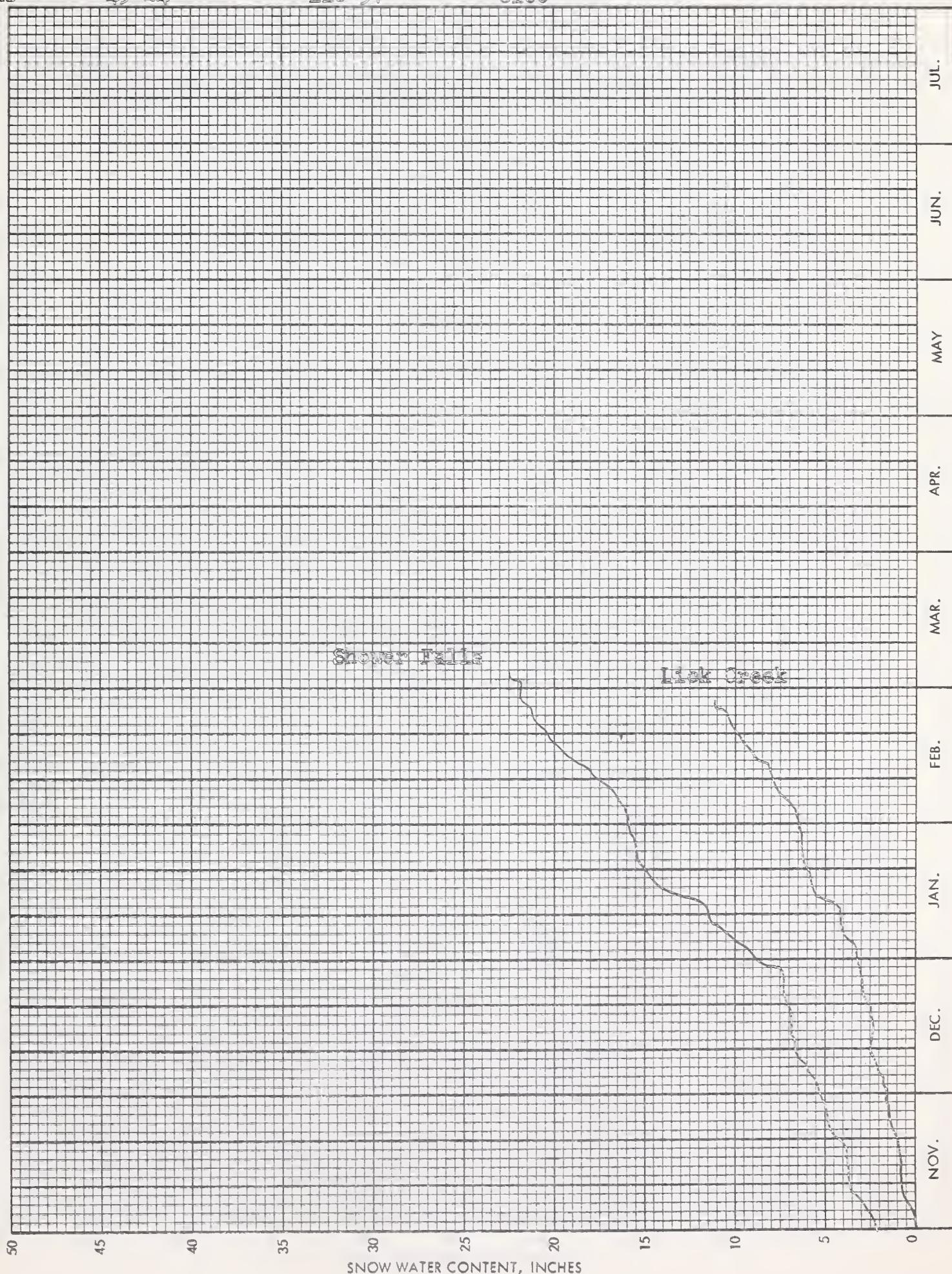




LICK CREEK & SHOWER FALLS
SNOW PILLOW DATA

AS OF MARCH 1, 1967

Lick Creek - Sec. 10 T. 4S R. 6E No. 10D13 Drainage: Gallatin
 Shower Falls - 14 5S 6E 10D16
 Lick Creek - Lat. 45-30 Long. 110-58 Elev. 6860
 Shower Falls - 45-24 110-57 8100

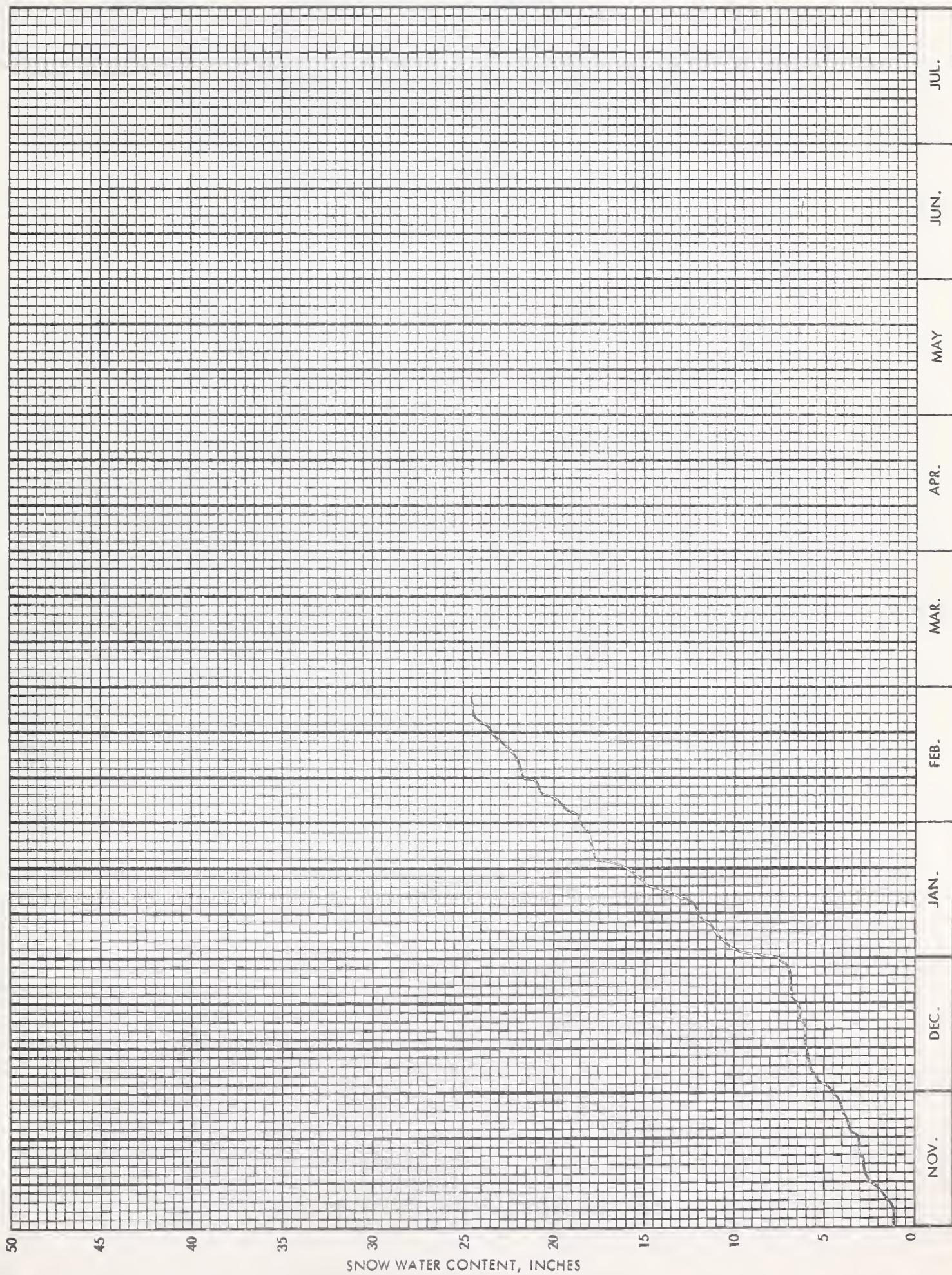




SPUR PARK
SNOW PILLOW DATA

AS OF MARCH 1, 1967

Sec. 20 T. 12N R. 9E No. 10006 Drainage: Judith
Lat. 46-47 Long. 110-37 Elev. 8000

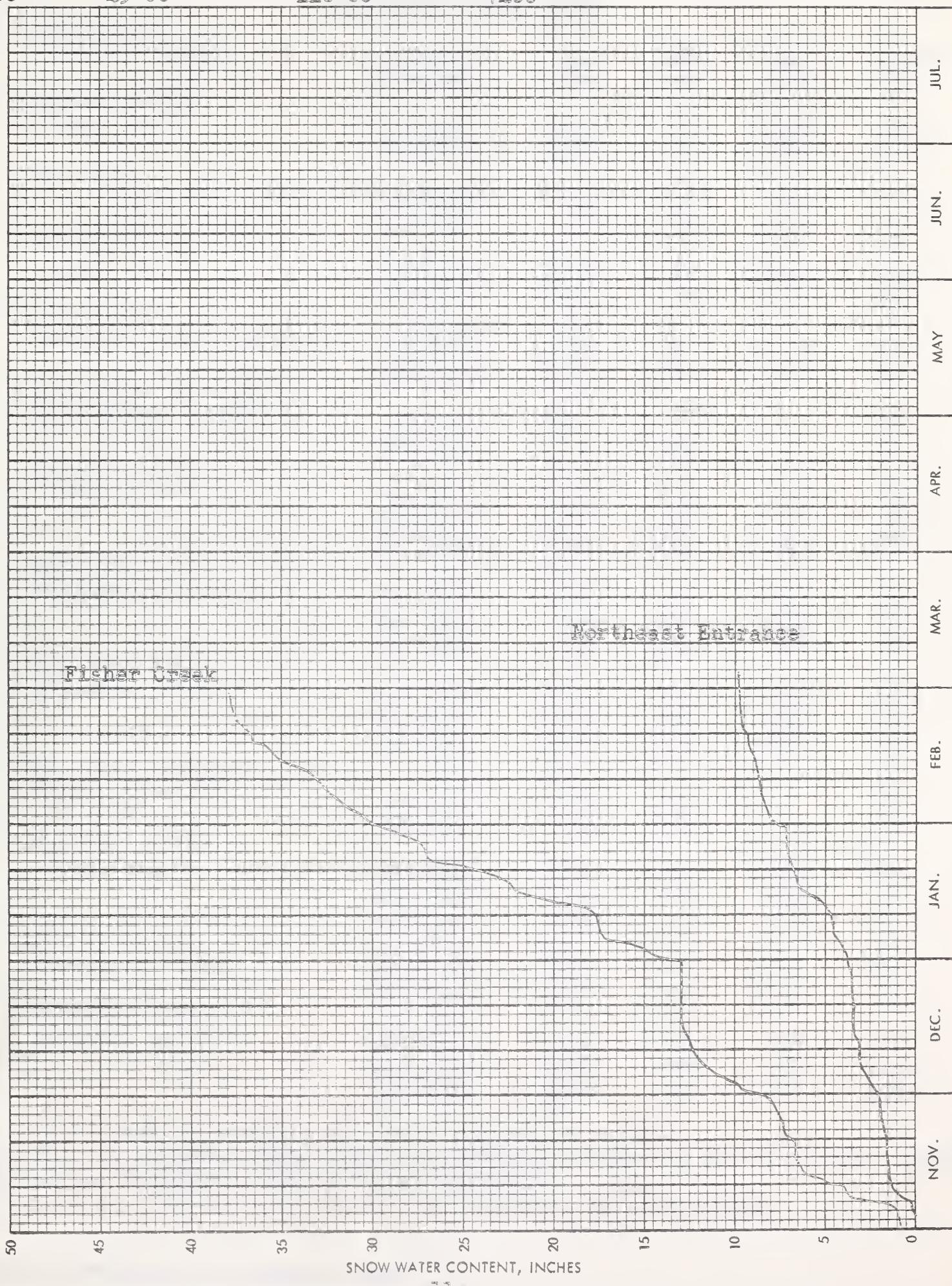




FISHER CREEK & N.E. ENTRANCE
SNOW PILLOW DATA

AS OF MARCH 1, 1967

Fisher Creek - Sec. 11 T. 9S R. 14E No. 9D06 Drainage: Yellowstone
N.E. Entrance - 33 9S 14E 10D07
Fisher Creek - Lat. 45-04 Long. 109-57 Elev. 9100
N.E. Entrance - 45-00 110-00 7400





WATER SUPPLY FORECASTS

AS OF MARCH 1, 1967

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	(1000 Acre Feet)	
					MEASURED FLOW LAST YEAR*	MEASURED FLOW AVERAGE
<u>COLUMBIA RIVER BASIN</u>						
	FISHER RIVER					
3020	Jennings (near)	Apr-Sept	345	108	247	318
		Apr-July	326	108	234	302
	KOOTENAI RIVER					
3030	Libby (at)	Apr-Sept	9820	121	7929	8096
		Apr-July	8500	121	6998	7010
	YAAK RIVER					
3045	Troy (near)	Apr-Sept	640	115	564	555
		Apr-July	612	115	549	532
	KOOTENAI RIVER					
3050	Leonia (at)	Apr-Sept	11020	118	9176	9327
		Apr-July	9650	118	8156	8179
	FLINT CREEK					
3301	Boulder Creek (below)(3)	Apr-Sept	75.8	104	47.3	73.0
		Apr-July	61.4	104	35.8	59.1
	MIDDLE FORK ROCK CREEK					
3320	Philipsburg (near)	Apr-Sept	85.0	109		77.8
		Apr-July	76.8	109		70.5
	BLACKFOOT RIVER					
3400	Bonner (near)	Apr-Sept	1170	113	717	1036
		Apr-July	1060	113	646	938
		Apr-June	920	113	569	812
	CLARK FORK RIVER					
3404	Milltown (above)(4)	Apr-Sept	820	102	483	802
		Apr-July	720	102	412	705
		Apr-June	618	102	356	605
	CLARK FORK RIVER					
3405	Missoula (above)	Apr-Sept	1990	108	1203	1838
		Apr-July	1780	108	1064	1642
		Apr-June	1538	108	931	1417
	WEST FORK BITTERROOT RIVER					
3425	Conner (near)(5)	Apr-Sept	190	106		179
		Apr-July	178	106		168
	BITTERROOT RIVER					
3440	Darby (near)	Apr-Sept	595	102	273	582
		Apr-July	555	102	240	542
		Apr-June	488	102	216	478
	BLODGETT CREEK					
3475	Corvallis (near)	Apr-Sept	44.5	100	30.2	44.6
		Apr-July	42.5	100	29.2	42.6
	BITTERROOT RIVER					
3528	Missoula (at)(6)	Apr-Sept	1522	98	813	1553
		Apr-July	1415	98	750	1446
		Apr-June	1225	98	677	1253

(3) Sum, Flint Creek at Maxville and Boulder Creek at Maxville.

(4) Difference in observed flow, Clark Fork above Missoula and Blackfoot near Bonner.

(5) Adjusted for storage in Painted Rocks Reservoir.

(6) Difference in observed flow, Clark Fork above and below Missoula.

TRANSACTIONS OF THE
AMERICAN ACADEMY

Volume 100, No. 1

1968

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1968

1968

TRANSACTIONS OF THE
AMERICAN ACADEMY

1968

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1967

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	(1000 Acre Feet)	
					MEASURED FLOW	LAST YEAR* AVERAGE
	CLARK FORK RIVER					
3530	Missoula (below)	Apr-Sept	3512	103	2016	3391
		Apr-July	3195	103	1814	3088
		Apr-June	2763	103	1608	2670
	CLARK FORK RIVER					
3545	St. Regis (at)	Apr-Sept	4670	101	2919	4642
		Apr-July	4260	101	2635	4230
		Apr-June	3700	101	2336	3671
	NORTH FORK FLATHEAD RIVER					
3555	Columbia Falls (near)	Apr-Sept	2550	125	1878	2027
		Apr-July	2310	125	1709	1844
		Apr-June	1960	125	1452	1565
	MIDDLE FORK FLATHEAD RIVER					
3585	West Glacier (near)	Apr-Sept	2300	120	1755	1923
		Apr-July	2130	120	1633	1785
		Apr-June	1820	120	1404	1521
	SOUTH FORK FLATHEAD RIVER					
3625	Columbia Falls (near)(7)	Apr-Sept	2850	120	2004	2381
		Apr-July	2710	120	1910	2262
		Apr-June	2380	120	1708	1988
	FLATHEAD RIVER					
3630	Columbia Falls (at)(7)	Apr-Sept	7900	122	5670	6497
		Apr-July	7360	122	5284	6028
		Apr-June	6320	122	4601	5185
	SWAN RIVER					
3700	Big Fork (near)	Apr-Sept	850	122	594	694
		Apr-July	750	122	526	614
		Apr-June	615	122	430	503
	FLATHEAD RIVER					
3720	Polson (near)(8)	Apr-Sept	9400	121	6841	7778
		Apr-July	8680	121	6399	7229
		Apr-June	7500	121	5519	6188
	CLARK FORK RIVER					
3890	Plains (near)(8)	Apr-Sept	14470	113	9968	12793
		Apr-July	13270	113	9175	11736
		Apr-June	11400	113	7942	10077
	THOMPSON RIVER					
3895	Thompson Falls (near)	Apr-Sept	315	104	212	302
		Apr-July	284	104	186	273
	PROSPECT CREEK					
3907	Thompson Falls (at)	Apr-Sept	172	104	124	165
		Apr-July	162	104	115	155
	CLARK FORK RIVER					
3920	Whitehorse Rapids (at)(9)	Apr-Sept	16170	112	11474	14398
		Apr-July	14800	112	10516	13187
		Apr-June	12700	112	9089	11318

(7) Adjusted for storage in Hungry Horse Reservoir.

(8) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.

(9) Adjusted for storage in Hungry Horse, Flathead Lake and Noxon Rapids Reservoirs.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1967

(1000 Acre Feet)

NO.	RIVER AND FORECAST POINT	FORECAST	FORECAST	PERCENT AVERAGE	MEASURED FLOW	
		PERIOD	THIS YEAR		LAST YEAR*	AVERAGE

MISSOURI RIVER BASIN

0110	RED ROCK RIVER Kennedy Ranch (at)	Apr-Sept Apr-July	89.5 82.5	125 125	50.2 47.6	71.7 66.2
0125	RED ROCK RIVER Monida (near)(11)	Apr-Sept Apr-July	94.0 88.5	120 120	55.1 53.6	784 73.7
0195	RUBY RIVER Alder (near)	Apr-Sept Apr-July	82.0 68.4	103 103	60.6 51.4	79.6 66.4
0255	BIG HOLE RIVER Melrose (near)	Apr-Sept Apr-July	710 704	99 99	300 280	718 669
0330	BOULDER RIVER Boulder (near)	Apr-Sept Apr-July	86.0 82.6	113 113	53.2 51.6	76.3 73.0
0345	JEFFERSON RIVER Sappington (at)(12)	Apr-Sept Apr-July	1050 945	108 108	331 304	974 875
0375	MADISON RIVER West Yellowstone (near)	Apr-Sept Apr-July	235 177	113 113	195 145	208 157
0385	MADISON RIVER Grayling (near)(13)	Apr-Sept Apr-July	484 380	115 115	378 287	420 330
0410	MADISON RIVER McAllister (near)(14)	Apr-Sept Apr-July	818 656	114 114	620 477	718 576
0435	GALLATIN RIVER Gateway (near)	Apr-Sept Apr-July	570 484	127 127	389 329	447 381
0485	BRIDGER CREEK Bozeman (near)	Apr-Sept Apr-July	26.5 24.9	133 133	17.6 16.6	19.9 18.7
0500	HYALITE CREEK Bozeman (near)(15)	Apr-Sept Apr-July	47.5 41.0	133 133		35.6 30.8
0525	GALLATIN RIVER Logan (at)	Apr-Sept Apr-July	620 527	133 133	320 262	467 396

(11) Adjusted for storage in Lima Reservoir.

(12) Adjusted for storage in Clark Canyon Reservoir.

(13) Adjusted for storage in Hebgen Lake.

(14) Adjusted for storage in Hebgen and Ennis Lakes.

(15) Adjusted for storage in Middle Creek Reservoir.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1967

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST THIS YEAR	PERCENT AVERAGE	(1000 Acre Feet)	
					MEASURED FLOW	LAST YEAR* AVERAGE
MISSOURI RIVER						
0545	Toston (at)(16)	Apr-Sept	2380	111	1119	2147
		Apr-July	2070	111	966	1861
PRICKLY PEAR CREEK						
0615	Clancy (near)	Apr-Sept	25.5	116		22.0
		Apr-July	22.2	116		19.2
SHEEP CREEK						
0770	White Sul. Spgs. (near)	Apr-Sept	22.3	135	19.1	16.5
		Apr-July	19.2	135	16.4	14.2
SUN RIVER						
0786	Gibson Dam (at)(17)	Apr-Sept	745	122	450	610
		Apr-July	683	122	412	559
MISSOURI RIVER						
0908	Fort Benton (at)(18)	Apr-Sept	3805	113		3319
		Apr-July	3190	113		2825
TWO MEDICINE CREEK						
0920	Browning (near)(19)	Apr-Sept	310	114		271
		Apr-July	197	114		260
BADGER CREEK						
0925	Browning (near)	Apr-Sept	166	116		143
		Apr-July	144	116		124
CUT BANK CREEK						
0990	Cut Bank (at)	Apr-Sept	150	106	89.2	142
		Apr-July	139	106	82.0	131
MARIAS RIVER						
0995	Shelby (near)(20)	Apr-Sept	710	109	435	651
		Apr-July	672	109	407	617
MISSOURI RIVER						
1095	Virgelle (at)(21)	Apr-Sept	4630	112		4116
		Apr-July	4000	112		3557
JUDITH RIVER						
1100	Utica (near)	Apr-Sept	43.5	130		33.5
		Apr-July	40.5	130		31.1
MISSOURI RIVER						
1150	Zortman (near)(21)	Apr-Sept	5100	113		4508
		Apr-July	4390	113		3878
NORTH FORK MUSSELSHELL R.						
1155	Delpine (near)	Apr-Sept	7.7	128	4.0	6.0
		Apr-July	6.4	128	3.5	5.0
SOUTH FORK MUSSELSHELL R.						
1185	Martinsdale (above)	Apr-Sept	58.0	119	44.2	48.8
		Apr-July	55.3	119	42.6	46.6

(16) Adjusted for storage in Hebgen and Ennis Lakes and Clark Canyon Reservoir.

(17) Adjusted for storage in Gibson Reservoir and diversions.

(18) Adjusted for storage in Canyon Ferry Reservoir.

(19) Adjusted for storage in Two Medicine Res. & diversions into Two Medicine Canal.

(20) Adjusted for storage in Two Medicine, Four Horns, Lake Frances & Swift Res.

(21) Adjusted for storage in Canyon Ferry and Tiber Reservoirs.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1967

NO.	RIVER AND FORECAST POINT	FORECAST	FORECAST	PERCENT	(1000 Acre Feet)	
		PERIOD	THIS YEAR		LAST YEAR*	AVERAGE
MISSOURI RIVER						
1320	Ft. Peck Dam (below)(22)	Apr-Sept	4900	111	4422	
		Apr-July	4300	111	3894	
MILK RIVER						
1350	Eastern Crossing (at)	Mar-Sept	253	93	284	272
MISSOURI RIVER						
1770	Wolf Point (near)(22)	Apr-Sept	5250	107	4879	
		Apr-July	4640	107	4317	
MISSOURI RIVER						
3300	Williston, N.D.(nr.)(29)	Apr-Sept	12000	109	11059	
		Apr-July	10700	109	9828	

SASKATCHEWAN RIVER BASIN

ST. MARY RIVER	
0175	Babb (near)(30)
	Apr-Sept

610 124 491

527 124 424

(22) Adjusted for storage in Canyon Ferry, Tiber and Fort Peck Reservoirs.
 (29) Adjusted for storage in Canyon Ferry, Tiber, Fort Peck, Buffalo Bill, Boysen and Yellowtail Reservoirs.
 (30) Adjusted for storage in Lake Sherburne.

WATER SUPPLY FORECASTS

AS OF MARCH 1, 1967

NO.	RIVER AND FORECAST POINT	FORECAST PERIOD	FORECAST	PERCENT AVERAGE	(1000 Acre Feet)	
			THIS YEAR		LAST YEAR*	AVERAGE
<u>YELLOWSTONE RIVER BASIN</u>						
1915	YELLOWSTONE RIVER Corwin Springs (at)	Apr-Sept Apr-July	2120 1780	113 113	1494 1250	1877 1572
1925	YELLOWSTONE RIVER Livingston (near)	Apr-Sept Apr-July	2400 2000	113 113	1628 1354	2127 1770
1935	SHIELDS RIVER Clyde Park (at)	Apr-Sept Apr-July	112 104	113 113		99.0 92.2
2000	BOULDER RIVER Big Timber (at)	Apr-Sept Apr-July	415 389	121 121	229 220	343 321
2050	STILLWATER RIVER Absarokee (near) (25)	Apr-Sept Apr-July	670 565	121 121		552 465
2075	CLARKS FORK RIVER Chance (at)	Apr-Sept Apr-July	655 582	112 112	431 389	583 528
2085	CLARKS FORK RIVER Edgar (at)	Apr-Sept Apr-July	675 597	111 111	430 379	609 538
2095	ROCK CREEK Red Lodge (near)	Apr-Sept Apr-July	128 99	124 124	91.4 69.1	103 79.6
2145	YELLOWSTONE RIVER Billings (at)	Apr-Sept Apr-July	4500 3870	115 115	2938 2516	3913 3362
2870	BIG HORN RIVER St. Xavier (near) (26)	Apr-Sept Apr-July	1700 1590	101 101		1677 1568
3090	YELLOWSTONE RIVER Miles City (at) (27)	Apr-Sept Apr-July	6400 5620	110 110		5778 5080
3295	YELLOWSTONE RIVER Sidney (near) (27)	Apr-Sept Apr-July	6430 5750	110 110		5850 5230

(25) Adjusted for storage in Mystic Lake.

(26) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake and Yellowtail Reservoirs.

(27) Adjusted for storage in Buffalo Bill, Boysen and Yellowtail Reservoirs.



SNOW SURVEY DATA

AS OF MARCH 1, 1967

(Inches)

NO.	SNOW COURSE NAME	ELEVATION	CURRENT DATA			PAST RECORD	
			DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT LAST YEAR	AVERAGE

COLUMBIA RIVER BASIN

KOOTENAI RIVER

15B11	Baree Creek	5500	3/1	134	54.8	38.5	-
15B16	Baree Midway	4600	2/28	110	44.4	30.9	-
15B15	Baree Trail	3800	2/28	27	8.4	11.2	-
14A04	Brush Creek	5000	3/1	40	13.2	11.7	12.7*
BC 10	Fernie	3500	2/27	28	8.3	10.0	9.0
BC 12A	Field	4200	2/28	69	7.5	5.1	5.8
BC 11	Glacier	4100	2/26	100	37.5	28.0	24.0*
14A11	Graves Creek	4300	2/28	66	23.5	15.3	-
BC 43	Gray Creek	5100	2/26	67	16.7	15.4	16.7*
BC 33	Kicking Horse	5400	2/28	53	16.3	13.0E	13.3
BC 20B	Kimberley	3800	2/26	24	6.9	8.8	8.4
BC 32	Marble Canyon	5000	2/28	54	17.5	16.3	13.5
BC 10B	Morrissey Ridge	6100	3/1	96	38.0	27.5	-
BC 10A	New Fernie	4100	2/27	55	18.1	15.3	13.2*
15A01	Red Mountain	6000	2/27	60	23.9	17.8	18.0
BC 8A	Sinclair Pass	4500	2/28	28	8.4	6.6	5.8*
BC 20A	Sullivan Mine	5100	2/27	44	14.1	12.5	13.4
BC 41	Upper Elk River	4400	2/26	25	10.5	6.5	7.9
14A07	Weasel Divide	5450	2/28	111	44.4	28.3	30.4*

FLATHEAD RIVER

14B03	Bassoo Peak	5150	2/27	34	11.2	10.8	11.1*
13A11	Beaver Lake	5900	3/5	71	25.2	17.5	-
13B03	Big Creek	6750	3/1	118	48.4	30.8	38.5
13A17	Camp Misery	6400	3/3	137	59.7	35.2	33.0*
13A02	Desert Mountain	5600	3/2	49	17.8	12.5	14.1*
13B04	Fatty Creek	5500	3/1	73	26.2	17.2	18.0*
14A09	Griffin Creek Divide	5150	2/28	42	13.3	9.8	12.4*
13B12	Gunsight Lake	6300	3/5	129	51.8	32.5	-
14A03	Hell Roaring Divide	5770	3/3	94	38.7	25.8	26.8*
13B13	Holbrook	4530	2/27	40	12.9	7.9	10.2*
14A06	Kishenehn	3890	2/28	36	9.8	8.8	9.9
14A05	Logan Creek	4300	3/6	33	7.9	8.0	8.8*
13A05	Marias Pass	5250	2/23	67	21.3	15.8	17.3
13A16	Mineral Creek	4000	2/25	70	23.0	17.8	19.8
13B07	North Fork Jocko	6330	3/2	132	49.8	33.8	39.8
13B02	Spotted Bear Mountain	7000	2/27	54	19.3	13.7	14.6
13B01	Trinkus Lake	6100	2/27	128	48.1	32.6	36.3*
13B11	Twin Creeks	3580	2/27	43	14.6	12.6	12.4*
13B05	Upper Holland Lake	7000	2/27	114	39.5	26.5	29.8*

E - Estimated

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE



SNOW SURVEY DATA

AS OF MARCH 1, 1967

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

CLARK FORK RIVER

13C13	Black Pine	7100	2/28	43	14.8	9.3	11.3*
13C13	Black Pine Pillow	7100	2/28	SP	13.8	9.1	-
12B10	Copper Creek	5700	3/3	57	20.0	12.4	-
12B11	Cotter Mine	6250	3/3	65	22.4	13.1	-
13B10	Coyote Hill	4200	3/2	38	12.0	8.4	10.2
13C09	El Dorado Mine	7800	3/3	64	19.2	10.8	17.6*
13C11	Fred Burr Pass	8000	2/28	69	24.7	15.4	23.8*
13C10	Gold Creek Lake	7200	3/3	49	14.3	8.6	13.4*
14C10	Heart Lake Trail	4800	3/2	73	22.0	21.4	-
15C10	Hoodoo Basin	6000	3/2	137	47.3	-	-
15C10	Hoodoo Basin Pillow	6000	2/27	SP	45.5	-	-
15C01	Hoodoo Creek	5900	3/2	132	46.1	34.6	45.3*
13C04	Intergaard	6450	3/1	30	8.6	5.7	7.2
15B02	Lookout	5250	3/1	103	35.6	27.1	34.8*
13C21	Lubrecht Forest No. 3	5450	2/26	26	7.0	6.9	7.4*
13C22	Lubrecht Forest No. 4	4650	2/26	11	3.0	3.6	3.9*
13C08	Lubrecht Forest No. 6	4040	2/26	13	3.8	3.8	4.6*
13C12	Red Lion	7100	2/28	46	15.0	10.0	13.8*
13C03	Skalkaho Summit	7260	3/2	77	27.2	17.2	22.5*
13C02	Slide Rock Mountain	7100	3/1	40	12.6	10.0	12.6*
13C05	Southern Cross	6500	3/1	27	8.3	5.4	5.6
13C18	Spring Gulch	6000	2/25	38	10.7	10.3	10.5*
13C07	Storm Lake	7780	2/27	42	12.5	7.6	11.7*
13C06	Stuart Mill	6500	3/1	26	7.2	4.8	5.9
13C01	Stuart Mountain	7400	2/25	85	31.2	25.1	26.5*
14B01	TV Mountain	6800	2/24	51	16.0	15.4	14.9*

BITTERROOT RIVER

13C16	Ambrose	6480	2/26	43	12.9	10.2	12.1*
13D01	East Fork R.S.	5400	2/26	24	6.5	4.5	7.1*
13D02	Gibbons Pass	7100	2/22	66	21.2	12.6	21.0
14C05	Lolo Pass	5230	2/24	93	31.3	20.2	32.2*
14C07	Lost Horse	5940	2/28	89	31.6	20.0	30.3*
13D16	Moose Creek	6200	3/1	48	16.0	10.6	14.9
14D02	Nez Perce Camp	5680	2/27	50	16.5	9.2	12.8*
14D01	Nez Perce Pass	6570	2/27	50	16.8	10.4	14.8*
13D22	Saddle Mountain	7940	2/27	69	24.2	13.4	-
14C04	Savage Pass	6600	2/24	76	26.0	21.2	25.0*
14C08	Twin Lakes	6510	2/28	110	39.8	26.6	39.5*

SP -

Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE



SNOW SURVEY DATA

AS OF MARCH 1, 1967

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	AVERAGE

MISSOURI RIVER BASIN

BEAVERHEAD RIVER

13D10	Bloody Dick	7600	2/28	35	10.6	6.2	9.6
12E03	Camp Creek	6800	2/27	34	10.0	6.8	8.7
12D04	Carter Creek	7400	No measurement			2.5	-
13E22	Dad Creek Lake	8400	2/23	44	12.1	-	-
13D15	Elk Horn Springs	7800	2/27	30	8.1	5.9	8.8
13D09	Gold Stone	8100	2/28	44	13.8	8.2	12.4
11E12	Kilgore	6200	2/26	33	10.0	8.2	8.8
11E04	Lakeview Canyon	6930	2/28	40	13.0	9.4	9.6
11E03	Lakeview Ridge	7400	2/28	37	11.8	7.7	8.1
13E01	Lemhi Pass	7480	2/27	29	7.2	5.4	7.1
13E23	Lemhi Ridge	8100	2/27	31	8.0	-	-
13E02	Trail Creek	7090	2/27	29	7.1	4.6	6.4
12E01	White Pine Ridge	8850	2/23	18	3.4	3.7	4.4

RUBY RIVER

11D08	Clover Meadow	8600	2/23	49	14.0	11.0	-
12E07	Divide	7900	2/23	37	9.8	7.0	-
12E06	Notch	8500	2/23	42	11.9	12.1	-

BIG HOLE RIVER

13D20	Abundance Lake	8800	2/23	56	17.0	13.6	-
13D19	Darkhorse Lake	8600	2/23	68	23.8	16.4	-
13D21	Foolhen	8280	2/23	50	15.4	10.7	-
13D08	Jahnke Creek	7340	2/28	32	8.9	5.5	8.8

JEFFERSON RIVER

12C07	Berry Meadow	7300	3/3	34	9.0	5.1	6.5*
12C09	Copper Mountain	7700	2/28	35	10.3	-	-
12C10	Nez Perce Creek	6500	2/28	26	7.2	-	-
12C06	Picnic Grounds	6500	2/28	20	5.0	2.6	4.2*
12D01	Pipestone Pass	7200	3/1	19	5.0	3.6	4.5

MADISON RIVER

11E09	Big Springs	6500	2/27	68	23.1	13.9	19.6
11D07	Call Road	8050	2/23	37	10.0	7.4	-
11D12	Four Mile	6900	3/2	26	6.8	5.3	-
11E25	Freezeout Lake	7200	2/23	36	9.8	-	-
11E26	Freezeout Mountain	8250	2/23	56	17.0	-	-
11E05	Hebgen Dam	6550	2/25	39	12.3	6.7	10.8
11E10	Island Park	6315	2/27	54	17.2	11.2	15.3
11D05	Jack Creek	7500	3/1	20	5.0	3.0	5.0*

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE



SNOW SURVEY DATA

AS OF MARCH 1, 1967

(Inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	AVERAGE

MADISON RIVER - (continued)

11E22	Lake Creek	6100	2/23	29	8.4	-	-
11E28	Lion Mountain Pillow	8760	2/20	SP	14.5	-	-
11D11	Lower Twin	7900	3/2	51	16.6	13.6	-
11E23	Meridian Creek	7000	2/24	33	8.8	-	-
10E02	Norris Basin	7500	3/1	41	12.4	7.1	9.0*
11D03	North Meadow	7500	3/2	26	6.8	4.9	7.3*
11E21	Potomageton Park	7150	2/24	51	16.1	9.5	-
11E20	Sentinel Creek	8300	2/24	78	26.1	15.4	-
11E24	Tepes Creek	8000	2/24	46	14.1	-	-
11E27	Upper West Fork	8750	2/20	50	14.4	-	-
11E08	Valley View	6500	2/27	61	22.2	10.6	13.2
11E07	West Yellowstone	6700	2/26	47	14.7	7.0	10.6
11E07	West Yellowstone Pillow	6700	2/28	SP	10.9	-	-

GALLATIN RIVER

10D14	Arch Falls	7350	2/27	42	12.2	6.4	9.5*
11D09	Bear Basin	8150	3/2	61	19.7	12.0	16.3*
10D15	Bridger Bowl Pillow	7250	2/28	SP	20.4	16.2	-
11E29	Carrot Basin Pillow	9000	2/20	SP	29.8	-	-
10D04	Devil's Slide	8100	2/27	67	21.4	12.2	17.4
10D03	Hood Meadow	6600	2/27	33	9.8	4.6	7.6
10D13	Lick Creek Pillow	6860	2/28	SP	11.2	5.5	-
11D10	Little Park	7400	3/2	50	15.6	8.5	11.4*
10D18	Maynard Creek Pillow	6210	2/28	SP	11.4	-	-
10D01	New World	6700	2/25	39	11.9	5.6	8.6
10D16	Shower Falls Pillow	8100	2/27	SP	22.0	14.6	-
11D13	Taylor Peaks Pillow	8500	2/23	SP	18.0	-	-
11E06	Twenty-One Mile	7150	2/26	60	21.5	12.7	15.8

MISSOURI RIVER (Main Stem)

11C01	Boulder Mountain	7950	2/27	55	17.8	12.2	12.5*
12C05	Chessman Reservoir	6200	2/28	16	4.5	2.2	4.0
10C09	Deadman Creek	6450	3/1	42	14.0	8.7	-
10C07	Elk Peak	8000	2/28	54	18.8	11.2	13.3*
10C02	Grasshopper	7000	2/28	16	4.2	4.0	4.3
10C01	Kings Hill	7500	2/27	53	16.0	7.8	11.0
9A01	Rocky Boy	5200	2/25	23	6.6	3.0	4.2
12C01	Stemple Pass	6600	2/27	43	12.6	7.1	9.2
12C02	Ten Mile Lower	6600	2/28	27	7.3	3.8	6.3
12C03	Ten Mile Middle	6800	2/27	36	10.3	6.1	9.1
12C04	Ten Mile Upper	8000	2/27	43	12.8	7.6	11.7

SP - Snow pillow observation = water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE



SNOW SURVEY DATA

AS OF MARCH 1, 1967

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	
						LAST YEAR	AVERAGE

SUN-TETON-MARIAS RIVERS

13A15	Badger Pass	6900	3/5	110	42.5	28.7	-
12B06	Cabin Creek	5200	3/5	33	12.4	6.6	6.8*
12B09	Five-Bull	5700	3/5	29	9.2	6.1	6.1*
12A01	Freight Creek	6000	3/5	53	18.8	13.2	14.5
12B07	Goat Mountain	7000	2/28	40	12.0	9.9	10.6
12B04	Wrong Creek	5700	3/5	52	20.0	13.3	14.5*
12B03	Wrong Ridge	6800	3/5	66	25.7	18.5	19.6*

JUDITH RIVER

9C02	Avalanche	7100	3/2	75	24.0	-	-
9C01	Crystal Lake	6100	3/1	47	14.4	8.1	10.5
9C03	Rock Creek	5600	3/2	35	10.1	-	-
10C06	Spur Park	8000	3/1	67	22.8	14.7	16.0*
10C06	Spur Park Pillow	8000	3/1	SP	24.9	-	-

MILK RIVER

10AA2	Cress Day B	3450	2/25	11	2.6	2.3	1.3*
9AA1	Cypress Park C	4000	2/27	21	5.3	4.2	4.1*
10AA1	Elkwater Lake A	4100	2/25	12	2.8	1.8	2.0*
7AA1	Val Marie D	2700	2/27	11	2.4	1.9	1.1*

ST. MARY RIVER

13A18	Hudson Bay Divide	5800	2/28	58	20.9	15.1	-
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SASKATCHEWAN (BOW) RIVER

Alb. 1	Bow River	5100	2/22	41	13.8	-	-
Alb. 2	North Course	5400	2/22	43	14.5	-	-
Alb. 5	Lake Louise	5800	2/23	45	14.8	-	-
Alb. 6	Mirror Lake	6600	2/23	50	16.2	-	-
Alb. 8	Misc. Lake Louise	5700	2/23	44	14.1	-	-
Alb. 10	Mount Eisenhower	5000	2/22	28	6.8	-	-

SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

SNOW SURVEY DATA

AS OF MARCH 1, 1967

(inches)

SNOW COURSE			CURRENT DATA			PAST RECORD	
NO.	NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH	WATER CONTENT	WATER CONTENT	AVERAGE

UPPER YELLOWSTONE RIVER

10C05	Bald Ridge	7500	3/1	34	10.6	7.4	9.2*
9D01	Camp Senia	7890	3/3	34	7.6	2.1	4.8*
10E03	Canyon	7750	2/26	55	16.8	9.8	13.1
9D07	Cooke Station	8150	3/1	62	20.5	11.6	-
10D05	Crevice Mountain	8400	2/28	37	10.0	6.0	7.5
10E06	East Entrance	7000	2/27	34	9.0	7.3	10.4*
9D06	Fisher Creek	9100	3/1	106	39.8	25.3	-
9D06	Fisher Creek Pillow	9100	3/1	SP	37.8	-	-
9D05	Grizzly Peak	8400	3/1	57	14.6	6.6	10.1*
10D06	Independence	8000	2/24	65	22.7	11.2	15.6*
10E04	Lake Camp	7850	2/28	40	11.2	5.5	9.0
9E01	Lodgepole	8200	3/1	39	11.4	5.5	8.6*
10E06	Lupine Creek	7300	3/3	44	13.5	7.5	9.5
10D12	Monument Peak	9000	2/24	84	29.2	15.2	18.1*
10D07	Northeast Entrance	7400	3/6	39	11.0	5.0	7.5
10D07	Northeast Entrance Pillow	7350	3/6	SP	10.2	-	-
10C03	Porcupine R.S.	6500	3/1	22	6.2	4.5	6.3
10D10	Sacajawea	6550	2/28	38	13.4	9.0	11.1*
10C08	South Fork Shields	8100	3/1	63	23.4	16.1	-
10E05	Sylvan Pass	7100	2/27	48	12.0	8.7	12.6
10E07	Thumb Divide	7900	2/28	66	22.3	17.1	20.0
9D04	Timberline Creek	8850	3/3	60	17.8	6.8	10.9*
9D02	West Rosebud	7500	2/28	44	15.0	-	-
9D08	White Mill	8700	3/1	82	29.5	-	-

SP - Snow pillow observation - water content only.

NOTE: ALL AVERAGES BASED ON 1948-1962 (15 YEAR PERIOD). *ADJUSTED AVERAGE

שם פרטי	שם משפחה	טלפון	כתובת	מספר מסמך	שם פרטי	שם משפחה	טלפון	כתובת	מספר מסמך
אברהם	אלון	052-1234567	רחוב הרוח 12, תל אביב	123456789	דוד	ברון	052-1234567	רחוב הרוח 12, תל אביב	123456789
אברהם	אלון	052-1234567	רחוב הרוח 12, תל אביב	123456789	דוד	ברון	052-1234567	רחוב הרוח 12, תל אביב	123456789
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אברהם	אלון	052-1234567	רחוב הרוח 12, תל אביב	123456789	דוד	ברון	052-1234567	רחוב הרוח 12, תל אביב	123456789
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אברהם	אלון	052-1234567	רחוב הרוח 12, תל אביב	123456789	דוד	ברון	052-1234567	רחוב הרוח 12, תל אביב	123456789

SOIL MOISTURE DATA

AS OF MARCH 1, 1967

(Inches)

SOIL MOISTURE STATION			SOIL PROFILE		CURRENT DATA		PAST RECORD	
NO.	NAME	ELEVATION	DEPTH	FIELD CAPACITY	DATE OF SURVEY	SOIL MOISTURE	LAST YEAR	**AVERAGE

COLUMBIA RIVER BASIN

Kootenai

15B15M	Baree Trail	3800	48	7.5	2/28	6.4	6.3	-
14A10M	Murphy Lake R.S.	3000	48	22.6	3/1	20.8	19.5	-
15A02M	Raven R.S.	3050	48	23.0	3/2	22.2	21.8	-

Flathead

13A02M	Desert Mountain	5600	54	8.4	3/2	8.0	2.3	7.1
13A05M	Marias Pass	5250	54	6.5	2/28	5.5	5.3	5.3

Clark Fork

13C13M	Black Pine	7100	48	10.0	2/28	8.0	5.2	-
13C15M	Georgetown Lake	6450	48	9.0	2/27	5.4	3.6	3.0
13B19M	Seeley Lake R.S.	4030	48	11.9			9.9	-
13C03M	Skalkaho Summit	7260	48	10.8	3/3	9.9	10.0	-

Bitterroot

13D18M	Gibbons Pass	7100	48	7.1	2/27	4.8	5.0	5.4
14C05M	Lolo Pass	5250	48	10.6	2/26	3.8	6.2	6.3

MISSOURI RIVER BASIN

Beaverhead

11E13M	Lakeview	6700	48	15.3	2/28	6.5	6.0	8.9
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Madison

10D04M	Red Bluff	4800	40	4.7	3/1	2.5	2.4	2.3
11E07M	West Yellowstone	6700	48	6.5	2/28	2.5	-	-

Gallatin

10D15M	Bridger Bowl	7250	48	15.8	2/28	15.9	15.7	-
11D02M	College Site	4856	54	14.5	2/24	12.5	13.5	9.7
10D13M	Lick Creek	6860	48	18.8	2/28	18.6	12.0	-
11E06M	Twenty-One Mile	7150	48	10.0	2/28	2.5	3.0	2.8

Missouri Main Stem

10C01M	Kings Hill	7420	48	11.8	3/1	4.9	8.8	8.1
12C08M	Stemple Pass	6350	48	5.9	3/1	4.0	4.4	4.2

Yellowstone

10D11M	Battle Ridge	6020	48	17.6	3/1	12.9	13.0	12.9
10D07M	Northeast Entrance	7350	48	9.4			7.5	7.1

**AVERAGE FOR PERIOD OF RECORD

RESERVOIR STORAGE DATA

AS OF FEBRUARY 28, 1967

(1000 Acre Feet)

BASIN	RESERVOIR	USEABLE CAPACITY	USEABLE STORAGE		
			THIS YEAR	LAST YEAR	AVERAGE
<u>COLUMBIA RIVER BASIN</u>					
Flathead	Hungry Horse	3,428.0	1,746.0	2,272.0	2,436.3**
	Flathead Lake	1,791.0	1,049.0	918.3	845.1
	Camas (Sum of 4)	45.2	26.0	28.8	32.2
	Mission Valley (Sum of 8)	100.3	25.1	60.1	34.5
Clark Fork	Georgetown Lake	31.0	20.0	26.8	23.2
	Noxon Rapids	334.6	267.0	308.3	-
Bitterroot	Como	34.9	10.0	14.6	11.8
	Painted Rocks	31.7	15.1	16.9	13.5**
<u>MISSOURI RIVER BASIN</u>					
Beaverhead	Clark Canyon	328.9	107.9	151.1	-
	Lima	84.0	14.0	45.9	26.1
Ruby	Ruby	38.8	-	-	23.0**
	Hebgen Lake	377.5	170.4	222.3	179.1
Madison	Ennis Lake	41.0	39.7	38.6	37.3
	Middle Creek	8.0	3.0	1.8	3.6**
Gallatin	Canyon Ferry	2,043.0	1,166.0	1,551.0	1,514.9**
	Hauser & Helena	61.9	61.9	62.4	53.9
Missouri	Lake Helena	10.4	10.4	10.7	7.8
	Holter Lake	81.9	81.1	81.7	50.7
Sun	Smith River	10.7	5.6	7.4	5.6**
	Ackley Lake	5.8	-	-	3.5
Gibson	Durand	7.0	4.4	5.4	4.2**
	Martinsdale	23.1	74.1	11.8	8.0**
Marias	Deadman's Basin	72.2	41.0	67.4	39.8**
	Fort Peck	19,410.0	15,460.0	16,700.0	10,595.1
Willow Creek	Gibson	105.0	21.9	50.8	58.5
	Willow Creek	32.3	16.4	23.8	19.6
Pishkun	Pishkun	32.0	16.0	18.8	18.4
	Lower Two Medicine	-	-	-	0.0
Lower Two Medicine	Four Horns	19.2	11.8	12.0	10.5
	Swift	-	-	-	22.0
Lake Frances	Lake Frances	112.0	-	93.8	91.8
	Tiber	1,347.0	471.1	663.3	629.4**
Fresno	Fresno	127.2	84.4	81.5	58.6
	Nelson	66.8	49.0	48.7	35.4
Yellowstone	Lake Sherburne	66.1	19.7	12.9	21.6
	Mystic Lake	20.8	7.7	10.5	7.8
Tongue River	Tongue River	68.0	-	34.3	13.1
	Cooney	27.5	15.8	17.9	11.1**
Big Horn	Yellowtail	1,356.0	651.6	202.1	-

Agencies Cooperating in Collecting Data Contained in this Bulletin

U. S. Forest Service
Region 1, Missoula, Montana

U. S. Geological Survey
Helena, Montana

U. S. Army Corps of Engineers
Portland, Oregon
Seattle, Washington
Omaha, Nebraska

U. S. Indian Irrigation Service
St. Ignatius, Montana

U. S. Weather Bureau
Helena, Montana

U. S. Bureau of Sports Fisheries
and Wildlife
Red Rock Lakes Refuge
Monida, Montana

U. S. Bureau of Reclamation
Billings, Montana
Boise, Idaho

U. S. Soil Conservation Service
Montana, Wyoming, Idaho

Soil and Water Conservation Districts
Montana Counties

U. S. Bonneville Power Administration
Portland, Oregon

U. S. National Park Service
Yellowstone National Park
Glacier National Park

Montana Power Company
Butte, Montana

State Water Conservation Board
Helena, Montana

North Montana Branch Station
Agricultural Experiment Station
Havre, Montana

Montana State University
Agricultural Experiment Station
Bozeman, Montana

University of Montana
School of Forestry
Missoula, Montana

Johnson Flying Service, Inc.
Missoula, Montana

Water Rights Branch, Dept. of
Lands and Forests
Victoria, British Columbia

Department of Northern Affairs
and National Resources
Calgary, Alberta

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